

### **REMARKS**

The Office Action dated August 5, 2010 has been received and carefully reviewed. The following remarks form a full and complete response thereto. Claims 1, 28, and 30 are independent. Claim 19 was previously cancelled without prejudice or disclaimer. Claims 1, 14, and 26-30 have been amended. Support for these amendments can be found in the pending application at, inter alia, paragraphs [0032]-[0033]. No new matter has been added. Claims 1-18 and 20-30 are pending in the application and are submitted for reconsideration.

#### **Claim rejections under 35 U.S.C. § 103**

The Office Action has rejected claims 1, 3, 5, 8-10, 13 and 24-26 under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent 4,455,359 to Pätzold ("Pätzold") in view of U.S. Patent 4,830,928 to Tamagawa ("Tamagawa"). Applicants traverse the rejection and submit that the rejection is improper.

Claim 1, from which claims 2-18 and 20-27 depend, is directed to a security paper for producing value documents. The security paper is creasable and foldable. The security paper is a multilayer substrate comprising at least one paper layer. The paper layer is laminated on both sides all over to plastic foil. That is, both sides of the paper layer have plastic foil applied to them. The plastic foil, that the paper layer is laminated to, is equipped with at least one security feature. The plastic foil has a total thickness of 1 to 20  $\mu\text{m}$ . The at least one paper layer has a weight of 50 to 100  $\text{g/m}^2$ .

Claim 28, from which claim 29 depends, is directed to a method for producing a creasable, foldable security paper for producing value documents. At least one paper layer is produced in a paper machine. The at least one paper layer has a weight of 50 to 100  $\text{g/m}^2$ . Then plastic foil is extruded onto both surfaces of the paper layer all over. That is, both sides of the paper layer have plastic foil applied to them. The plastic foil may be already equipped with at least one security feature, or alternatively equipped with at least one security feature after application. The plastic foil has a total thickness of 1 to 20  $\mu\text{m}$ .

Claim 30 is directed to a security paper for producing value documents. The security paper is a creasable and foldable. The security paper is a multilayer substrate. The multilayer substrate is made up of at least one paper layer having laminated plastic foil extruded onto both sides all over. That is, both sides of the paper layer have plastic foil applied to them. The plastic

foil is equipped with at least one security feature. The plastic foil has a total thickness of 1 to 20  $\mu\text{m}$ . The at least one paper layer has a weight of 50 to 100  $\text{g/m}^2$ .

Pätzold relates to laminated tamper-proof cards such as a credit card having photographic information. See Pätzold Abstract. Pätzold discloses, in its Background, cards having a photographic paper inlet welded between two clear foils by the application of pressure and temperature round the edges. See Pätzold Col. 1, Lines 16-39. Pätzold teaches to indissolubly attach the whole surface of the photographic material to the transparent foil so that the information carrier is no longer accessible without destruction thereof. See Pätzold Col. 1, Lines 51-60. Pätzold relates to photographic information carriers and, in particular, to photographic information carriers in card form, and suggests that the information carrier has a certain thickness. See Pätzold Col. 1, Lines 7-10. The photographic paper used in this context is accordingly also relatively heavy (e.g., conventional photographic paper with a weight of approximately 120  $\text{g/m}^2$ ). See Pätzold Col. 6, Lines 30-32. Pätzold teaches that the information carrier is laminated on one or both sides to a transparent foil by means of a hardenable adhesive. See Pätzold Abstract. The thickness of the foils disclosed in Pätzold is from 15 to 250  $\mu\text{m}$ , preferably 50 to 200  $\mu\text{m}$ . See Pätzold Col. 4, Lines 61-65. Thus, one of ordinary skill in the art would understand that, according to the teachings of Pätzold, if a foil were to be applied to each side (i.e., laminated on both sides all over) of the information carrier then the two foils would have a minimum combined thickness of 30  $\mu\text{m}$ . Moreover, according to the teachings of Pätzold, the preferred minimum combined thickness of the two foil layers would be 100  $\mu\text{m}$ .

Tamagawa discloses a support for a photographic paper which is characterized by an improved surface smoothness. See Tamagawa Abstract. To achieve this improvement, the paper layer of the photographic paper is treated with a cationic softening agent. See Tamagawa Col. 2, Lines 19-20. The paper layer of Tamagawa has a basis weight of 80 to 200  $\text{g/m}^2$ . To render the support water resistant, both sides of the support are coated with polyethylene layers. See Tamagawa Col. 1, Lines 11-13. The polyethylene layers are applied by extrusion. See Tamagawa Col. 1, Lines 47-59. The thickness of the polyethylene layers disclosed in Tamagawa is 15 to 40  $\mu\text{m}$  per side. See Tamagawa Col. 3, Lines 41-43. Thus, one of ordinary skill in the art would understand that, according to the teachings of Tamagawa, if a polyethylene layer were to be applied to each side (i.e., laminated on both sides all over) of the support then the two polyethylene layers would have a minimum combined thickness of 30  $\mu\text{m}$ . A photosensitive

layer (e.g., on a gelatine basis) is then applied to the paper support that has already been coated with the polyethylene layers. See Tamagawa Col. 4, Lines 13-15. Because the photosensitive layer is outside of the polyethylene layers, the photosensitive layer is essentially unprotected against any kind of manipulation. This is acceptable in Tamagawa, because this reference is directed only to ordinary photographic paper, and in no way is directed to any type of secured paper or document of value.

While independent claims 1, 28, and 30 have been rejected over various combinations of prior art, these rejections are common in that each combination relies upon Pätzold as teaching or suggesting the following limitations:

- “at least one paper layer laminated on both sides all over to plastic foil...wherein the plastic foil has a total thickness of 1 to 20  $\mu\text{m}$ ,” as recited in claim 1;
- “then plastic foil is extruded onto both surfaces of the paper layer all over...the plastic foil having a total thickness of 1 to 20  $\mu\text{m}$ ,” as recited in claim 28; and
- “at least one paper layer having laminated plastic foil extruded on both sides all over...wherein the plastic foil has a total thickness of 1 to 20  $\mu\text{m}$ ,” as recited in claim 30.

Because the arguments as to why Pätzold fails to disclose these limitations are identical, claims 1, 28 and 30 will be discussed together.

As noted above, each of claims 1, 28, and 30 require that a plastic foil be applied to both sides of a paper layer. Additionally, each of claims 1, 28, and 30 require that the plastic foil have a maximum thickness of 20  $\mu\text{m}$ . That is, the total thickness of the plastic foil applied to both sides of the paper layer is no more than 20  $\mu\text{m}$ . The purpose for limiting the total thickness of the plastic foil is to maintain the paper-like qualities of the security paper. In particular, each of claims 1, 28, and 30 requires that the security paper be creasable and foldable. See Claims 1, 28, and 30.

The Office Action alleges correctly that Pätzold teaches or suggests a plastic foil having a thickness from 15 to 250  $\mu\text{m}$  at column 4, lines 61-63. See Office Action page 5. However, the Office Action has failed to acknowledge that this foil thickness is per side of the information carrier. As disclosed in Pätzold: “[t]he present invention thus provides a tamper-proof document consisting of an information carrier in the form of a photographic material carrying information and laminated on one or both sides to at least one transparent foil by means of a layer of

adhesive.” See Pätzold Col. 1, Lns. 61-65. Thus, one of ordinary skill in the art would understand that, according to the teachings of Pätzold, if a foil were to be applied to one side of the information carrier, the foil would have a minimum thickness of 15  $\mu\text{m}$ . Likewise, one of ordinary skill in the art would understand that, according to the teachings of Pätzold, if a foil were to be applied to each side (i.e., laminated on both sides all over) of the information carrier, the two foils would have a minimum combined thickness of 30  $\mu\text{m}$ , i.e., the minimum foil thickness of 15  $\mu\text{m}$  multiplied by two in order to account for the foil being applied to each side of the information carrier.

As clearly set forth above, the claimed invention requires that the plastic foil be applied to both sides of the paper layer and be no thicker than 20  $\mu\text{m}$ . Pätzold does disclose a plastic foil applied to both sides of an information carrier; however, the combined thickness of the plastic foils would be no less than 30  $\mu\text{m}$ . This minimum foil thickness of Pätzold is full 50% greater than the claimed maximum thickness of the plastic foil of the present invention. Thus, clearly Pätzold fails to teach the above recited limitations of claims 1, 28, and 30, which require that the plastic foil be applied to both sides of the paper layer and have a total thickness of no more than 20  $\mu\text{m}$ . None of the other prior art references cure this defect of Pätzold. For at least this reason, claims 1, 28, and 30 are patentable over the combination of prior art references cited by the Office Action.

Additionally, claims 1, 28, and 30 recite that the security paper is creasable and foldable. The Office Action has alleged that “any paper can be creased or folded.” See Office Action page 3. This is simply false in view of both the teachings of the prior art and the current application.

As discussed in detail above, Pätzold is directed to laminated tamper-proof cards such as a credit card having photographic information. See Pätzold Abstract. The stiffness of the credit cards is due in part to the thickness of the plastic foils applied to the information carrier, as discussed in detail above. Thus, according to the teachings of Pätzold, a card that had plastic foil applied to both sides would be stiffer at the maximum combined foil thickness of 500  $\mu\text{m}$  and less stiff at the minimum combined foil thickness of 30  $\mu\text{m}$ . However, in both cases, one of ordinary skill in the art would not recognize that the cards disclosed in Pätzold are creasable and foldable.

Moreover, the specification sets forth that a security paper is creasable and foldable if the at least one paper layer has a weight of 50 to 100 g/m<sup>2</sup> and the total thickness of the plastic foil is between 1 and 20 µm. See Appln. paragraphs [0009], [0012], [0014]-[0015], and [0032]. Likewise, if the paper layer weight exceeds 100 g/m<sup>2</sup>, and/or the plastic foil applied to both sides of the paper layer is thicker than 20 µm, the security paper is not creasable and foldable.

Thus, because neither Pätzold, nor any other cited prior art reference, teaches or suggests a plastic foil, applied to both sides of a paper layer, which is no thicker than 20 µm, the prior art fails to teach or suggest a security paper is creasable and foldable within the context of the present invention. For this additional and independent reason, claims 1, 28, and 30 are patentable over the combination of prior art references cited by the Office Action.

Additionally, Applicants assert that even if the combination of Pätzold and Tamagawa could yield the present invention, which it cannot, one would only combine these references using impermissible hindsight. Specifically, Applicants submit that the rejection is improper at least for at least the reason that a person of ordinary skill in the art, starting with Pätzold and confronted with the problem of creating a security document that is “creasable and foldable,” would not have consulted Tamagawa.

First, Tamagawa is not analogous to the present invention. As discussed above, Tamagawa, is directed only to ordinary photographic paper and in no way is directed to any type of secured paper or document of value. By contrast, both the present invention and Pätzold are directed to information carriers that are secure. When determining if art is analogous, it is important to consider both the structure and the function of the invention and the art. See MPEP § 2141.01. One of ordinary skill in the art would not have combined the teachings of Pätzold and Tamagawa because the structure of Tamagawa, as discussed above, leaves the photosensitive layer unprotected from any kind of manipulation. Therefore, because the function of Tamagawa is so far afield of the function of both the present invention and Pätzold, one of ordinary skill in the art would only have combined Pätzold and Tamagawa using impermissible hindsight. For this additional and independent reason, claims 1, 28, and 30 are patentable over the combination of prior art references cited by the Office Action.

Second, one of ordinary skill in the art would not find a rational basis to combine the teachings of Pätzold and Tamagawa to construct a rigid information carrier according to (e.g., a credit card). One of ordinary skill in the art would recognize that credit cards should not be

creasable and foldable. In order to ensure that credit cards are not creasable and foldable, the credit cards must have sufficient rigidity. This rigidity is, according to the teachings of Pätzold, due to a combination of paper weight and thickness of the foil layer(s). The weight of the paper disclosed in Pätzold is approximately 120 g/m<sup>2</sup>. See Pätzold Col. 6, Lines 30-32. The heavy nature of the paper gives the information carrier of Pätzold additional rigidity. Further, Pätzold discloses that the preferred foil thickness is from 50 to 200  $\mu\text{m}$ . See Pätzold Col. 4, Lines 63-65. That is, according to Pätzold, an information carrier with foils applied to each side would have a preferred total thickness of 100 to 400  $\mu\text{m}$ . This additional thickness of the foils renders the information carrier of Pätzold very rigid. One of ordinary skill in the art would not have combined the minimum disclosed foil thickness of Pätzold (i.e., 15  $\mu\text{m}$  per side for a total foil thickness of 30  $\mu\text{m}$  for an information carrier coated on both sides) with the lighter weight paper of Tamagawa as a way to increase the rigidity of an information carrier such that it would be suitable for use as a credit card. To the contrary, one of ordinary skill in the art would recognize that this combination would lead to the development of a more flexible credit card, which is undesirable. Thus, the Office Action's combination of Pätzold and Tamagawa can only have been achieved by first reading the pending application, and then subsequently piecing together its limitation using improper hindsight.

For at least the above discussed reasons, claims 1, 28, and 30 are patentable over the cited prior art references. Additionally, because claim 1 is allowable over the combination of Pätzold and Tamagawa, claims 2-18 and 20-27 are likewise allowable over the prior art. Additionally, because claim 28 is allowable over the combination of Pätzold and Tamagawa, claim 29 is likewise allowable over the prior art. Applicants respectfully request that the rejections be withdrawn.

The Office Action has rejected claims 2, 4, 6, 7, 14-16, 20-22 and 27 under 35 U.S.C. § 103(a) as allegedly being obvious over Pätzold in view of Tamagawa and further in view of U.S. Patent No. 5,868,902 to Howland ("Howland") and U.S. Pat. 4,462,866 to Tooth ("Tooth") and as evidenced by an article entitled "Paper, Its making, merchanting and usage" by E.W. Haylock, J.P. The National Association of Paper Merchants, London, (1974) ("Haylock"). Applicants traverse the rejection and submit that the rejection is improper.

Howland is directed to forming paper in a wet state, the paper having a security feature, applying to the paper a sizing agent, and applying a coating comprising an unpigmented polyurethane. See Howland Abstract. Howland fails to cure the above described defects of Pätzold and Tamagawa.

Tooth is directed to security papers having an elongate element partially disposed within the thickness of the paper and used for bank notes and checks. See Tooth Abstract. Tooth also fails to cure the above described defects of Pätzold and Tamagawa.

Haylock is directed to various plant fibers that are used from making paper. See Haylock page 22. For example, Haylock notes that paper can be made from cotton, flax, hemp, sisal, or eucalyptus. Haylock also fails to cure the above described defects of Pätzold and Tamagawa.

Because the additional prior art cited fails to cure the above discussed defects of Pätzold and Tamagawa, claims 2, 4, 6, 7, 14-16, 20-22 and 27-29 are allowable over the combination of Pätzold, Tamagawa, Howland, Tooth, and Haylock.

The Office Action has rejected claims 11, 12, 17 and 28-30 under 35 U.S.C. § 103(a) as allegedly being obvious over Pätzold and Tamagawa and further in view of U.S. Published Patent Application No. 2002/0022112 to Hoeppner (“Hoeppner”). Applicants traverse the rejection and submit that the rejection is improper.

Hoeppner is directed to a process for the production of multi-layer security products. See Hoeppner Abstract. Hoeppner fails to cure the above described defects of Pätzold and Tamagawa.

Because Hoeppner fails to cure the above discussed defects of Pätzold and Tamagawa, claims 11, 12, 17 and 28-30 are allowable over the combination of Pätzold, Tamagawa, and Hoeppner.

The Office Action has rejected claim 18 under 35 U.S.C. § 103(a) as being obvious over Pätzold in view of Tamagawa and further in view of Hoeppner and even further in view of U.S. Patent No. 5,686,180 to Rivlin et al., (“Rivlin”). Applicants traverse the rejection and submit that the rejection is improper.

Rivlin is directed to a water activated adhesive and adhesive tape. Rivlin fails to cure the above described defects of Pätzold and Tamagawa.

Because Rivlin fails to cure the above discussed defects of Pätzold, Tamagawa, and Hoeppner, claim 18 is allowable over the combination of Pätzold, Tamagawa, Hoeppner, and Rivlin.

The Office Action has rejected claim 23 under 35 U.S.C. § 103(a) as being obvious over Pätzold in view of Tamagawa and further in view of U.S. Patent No. 3,489,643 to Hoffman. Applicants traverse the rejection and submit that the rejection is improper.

Hoffman is directed to a sheet material, including long undrawn polyamide fibers, of improved tear strength. See Hoffman Abstract. Hoffman fails to cure the above described defects of Pätzold and Tamagawa.

Because Hoffman fails to cure the above discussed defects of Pätzold and Tamagawa, claim 23 is allowable over the combination of Pätzold, Tamagawa, and Hoffman.



**Conclusion**

In view of the above, all objections and rejections have been sufficiently addressed. The Applicants submit that the application is now in condition for allowance and request that claims 1-18 and 20-30 be allowed and this application passed to issue.

In the event that this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 02-2135.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

Respectfully submitted,

By: /Joseph E. Green/  
Joseph E. Green  
Attorney for the Applicants  
Reg. No. 60,197  
ROTHWELL, FIGG, ERNST & MANBECK, p.c.  
1425 K Street, N.W., Suite 800  
Washington, D.C. 20005  
(202) 783-6040